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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/684,596 | 10/15/2003 | Ashima B. Chakravarti | 00750479AA | 1755 |

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| EXAMINER | |
|---|---|
| SCHILLINGER, LAURA M | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2813 | |

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/684,596 | CHAKRAVARTI ET AL. | |
| | Examiner | Art Unit | |
| | Laura M. Schillinger | 2813 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *12 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *16-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/9/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

Applicant's election of claims 1-15 in the reply filed on 1/12/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 16-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/12/05.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Chakravarti et al ('772)

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The following claimed limitations are taught by Chakravarti et al as cited below:

1. A process for growing amorphous or polycrystalline silicon, comprising: growing a film, including mixing:

(A) SiH4 or a silane derivative, with (B) a compound comprising Si, N and C in any combination (Fig.2).

2. The process of claim 1, wherein the compound comprising Si, N and C

is $(R\text{-}NH)_{4-n}\ SiX_n$

wherein R is an alkyl group (which may be the same or different), n is 1, 2 or 3, and X is H or halogen (Abs., lines: 1-5)

The process of claim 1, wherein the compound comprising Si, N and C is bis-tertiary butyl amino silane (BTBAS)(Fig.2).

4. The process of claim 1, wherein silane is mixed with BTBAS (Fig.2).

5. The process of claim 1, wherein a polysilicon film is grown(Col.2, lines: 10-15).

6. The process of claim 1, with a growth time in a range of 15 to 600 seconds for a RTCVD or PECVD process, at a pressure in a range of sub- millitorr to atmosphere, at a temperature in a range of 300 C to 800 C (Col.4, lines: 50-60).

7. The process of claim 5, including mixing: silane, in a range of 1 to 99% with BTBAS, in a range of 1 to 99% (Fig.1 and 2).

8. The process of claim 7, including mixing silane at 45 sccm with BTBAS at 200 sccm (Col.4, lines: 45-60).

9. The process of claim 1, wherein the silane derivative is selected from the group consisting of disilane, trisilane, hexachloro disilane and dichloro silane (Col.1, liens: 10-25).

10. A reagent mixture from which to grow a film, comprising (A) SiH4 or a silane derivative mixed with (B) a compound comprising Si, N and C in any combination (Fig.1 and 2).

11. The process of claim 1, wherein the compound B

is $(R\text{-}NH)_{4-n}\ SiX_n$

wherein R is an alkyl group (which may be the same or different), n is 1, 2 or 3, and X is H or halogen (Abs., lines: 1-5).

12. The reagent mixture of claim 10, wherein compound (B) is bis-tertiary butyl amino silane (BTBAS) (Col.2, lines: 35-40).

13. The reagent mixture of claim 10, wherein SiH4 is mixed with BTBAS to grow a polycrystalline film (Fig.1 and 2 and Col.2, lines: 10-15).

14. The reagent mixture of claim 10, wherein SiH4 is mixed with BTBAS to grow an amorphous film(Fig.1 and 2 and Col.2, lines: 10-15).

15. The reagent mixture of claim 10, wherein the silane derivative is selected from the group consisting of disilane, trisilane, hexachloro disilane and dichloro silane (Col.1, lines: 10-25).

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura M. Schillinger whose telephone number is (571) 272-1697. The examiner can normally be reached on M-T, R-F 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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